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Ready-made Plans for Planting.

NOT long ago we received the following inquiry: "I have a small lot containing about three-fourths of an acre of land on which I propose to build a modest house. The shape of the plot is nearly rectangular, and it is twice as long as it is broad. Can you refer me to any prepared plan for laying out such a piece of ground which would probably be suitable for my purpose?" It is not to be assumed from this that our correspondent imagines that ready-made plans, in assorted sizes, are kept in stock, and that these can be made to fit any lot of a given size or shape like a ready-made garment, and yet it is plain that he does not clearly understand what kind of problems are to be met and solved in every case where a dwelling-house and its surroundings are successfully adjusted and arranged. We do not know whether this land is in a town or in the open country; whether it is level or on a hill-side. It may be desirable to have a portion of it serve simply as the foreground to some pleasing landscape. Perhaps the planting should be arranged to frame in some distant prospect or to shut out from view some disagreeable object, and we do not even know how the land lies in relation to the points of the compass, not to speak of the direction and position of any outside objects, attractive or repulsive, which must be considered in the design. We know nothing of the size or the character of the house, and nothing of the taste or needs of the family who propose to occupy it, and without knowledge of these and a hundred other essential considerations it is not possible to give advice which will be of real value in any particular case.

We are aware that planting-plans are sometimes furnished by persons who have nothing to guide them but an outline map of the ground. We have known architects to furnish plans for a building before they had ever seen the land on which it was to stand. In a recent instance the plans for a villa of some pretensions were prepared under the impression that the main entrance faced the east, when in reality it looked toward the south-west, so that every provision which had been made with reference to sunshine and shadow was hopelessly wrong. Few architects, however, would attempt any serious work with so little knowledge of the lay of the land on which it was intended to build; and just here it may again be insisted on that the plan of the grounds should depend largely on the plan of the house, and, for reasons which have often been urged in these columns, the two should be designed together, or, rather, should form one consistent scheme. This means that the approaches, entrances and the various outlooks from the house should feel the influence of their surroundings, which should not only determine where the house should be placed, but how its internal structure should be arranged. It is plain, too, that the planting must, in a large measure, be controlled by the style of the house. Even a detail, like the planting about the house-foundation, should be modified as the building is low or lofty, modest or stately. A varied collection of vines or shrubs of distinct or diverse forms, that would be appropriate along the base-wall of an irregular building, would be out of place along the straight lines of a plainer structure. Convenience and comfort, as well as good taste, demand a perfect correlation between the house and its surroundings.

It is not to be inferred from this that the volumes of plans which have been published are all useless. A complete plan may be most instructive if accompanied by a full explanation of the reasons which guided the artist in each step of his design, and any plan is valuable so far as it can be made to illustrate sound principles. It is true that many published designs are misleading rather than instructive, because the laws they aim to enforce are vicious, and the details insisted on are inartistic and petty; but this is the fault of their authors. They can be made helpful, but no one would ever think of adopting one of them entire for practical use as a working plan. If a plan is good for one place, it is for that very reason unfit for any other, for if it is the best possible for one set of conditions it will be unsuited to another set, and no two places are identical in all their features and relations. Even if it were desirable to reproduce or imitate in the surroundings of one house the effects which have been found pleasing in another, the result would certainly be unsatisfactory. We may repeat without end a fashionable pattern in millinery, but second-hand ideas in gardening are more difficult of adoption. Every shrub or tree has an individual quality, and they refuse to duplicate themselves precisely even in the same soil and exposure, so that it is easier to produce something characteristic and appropriate in any given position than it is to struggle after the reproduction of any landscape-picture, and, in the end, only succeed in making a parody of the original.

After all, the minutiæ of planting, especially of such planting as is termed decorative, is a matter of subordinate importance. It is the fundamental design, the way in which the house and grounds and approaches are framed together, and not its ornamental appendages, which determines the essential character of the place. It is the adjustment of these controlling elements which demands special study in every individual example; and although, as has been said, ready-made plans may offer suggestions and exemplify principles, every successful treatment of a house and its surroundings is original and, in a measure, a new creation. It is our belief that the production of such a design is an object worthy of the study of a trained and conscientious artist. Without the thought of a competent designer in a unified plan of dwelling and grounds, the varied wants of a modern household will not be adequately provided for nor its convenience assured. To secure these advantages in full measure is surely worth all the special study which each individual instance can demand, and this is especially true since it is possible, in addition to making the most of every opportunity in the direction of health and comfort, to make the place perennially attractive to the eye of cultivated taste.

We quote the following paragraph from an editorial article recently published in the *American Architect and Building News*, knowing that other suburban communities, beside those in the neighborhood of Boston, are suffering from the evils therein set forth:

The operations of the Boston Board of Survey, which is authorized by law, on petition of the majority of property-owners in any part of the city, to lay out streets to the territory concerned, establish grades, and construct the streets, assessing the cost on the owners of the land, have attracted the very favorable attention of the inhabitants of the neighboring towns, and Brookline, the richest and most prosperous suburban village, has already voted to petition the Legislature, at its next session, for authority to establish a similar Board of Survey, with the same powers. As the contrast between a systematic, economical and convenient method of laying out streets, and the extravagant, ridiculous, and, in one word, idiotic practice at present in vogue in the other neighboring towns grows more glaring, the example of Brookline will probably be widely followed, and then, at last, will the very important suburban portion of Boston enter upon a period of substantial development. As we once mentioned, out of a total of about one hundred streets in one suburban district, which fairly represents all, more than forty are culs-de-sac, or return to the point from which they started; and every year adds considerably to the number of abortions, while the laying-out of a street which can be passed through, to reach any other point, usually requires the intervention of the County Commissioners, and is an extremely rare event. The consequence is that driving through the Boston suburbs is to a stranger generally one of the most exasperating experiences of his life. Starting, let us say, on a country road, which, however, soon takes a direction away from the point he wishes to reach, he endeavors to find a transverse street which will lead him toward his destination. Of what appear to be transverse streets there is no lack, but to find a navigable one, so to speak, is quite a different matter. Three-fourths of them, in some of the towns, are marked with the warning "Dangerous," and the prudent charioteer takes care not to tempt the perils which lurk within them. Reaching, at last, one without the alarming sign, he turns into it, and drives a few hundred yards, when he reaches a fence, at which the street terminates, either in a neat oval, or a jungle of weeds. Turning, with difficulty, he makes his way back to the high-road, and proceeds, getting always farther from the place he wishes to reach, until he finds another promising-looking street. This, on trial, proves to describe three sides of a square, and conducts him back to the high-road, half a dozen rods beyond where he left it. The next street that looks feasible takes him, between two rows of handsome houses, straight to a pond, and, unless his horse and carriage are adapted for swimming, there is nothing for it but to return to the high-road again. The next public way, perhaps, brings up against a gravel-bank, and another, beautifully macadamized, leads him to a circular park, from which there is no other outlet. By the time he has studied the varied topography of all these specimens of suburban engineering, the day has nearly passed, and he returns to his starting-point with thoughts upon suburban town governments which would hardly bear expression. Of course, the natives understand that the reason why Arlington Avenue comes to a dead stop under a tree is that the owner of the land beyond the tree went back on his promise to extend it through his property; and that Smithdale Street forms three sides of a square because Mr. Smith only had six acres of land, and wanted to have his street all on his own ground; but the knowledge of these personal matters does not do much to console the people who would like to use these avenues for the purpose of getting somewhere, and not as subjects of ethical study; while even the tax-payers, when they find themselves confronted with a heavy appropriation for extending a few of these culs-de-sac to a proper outlet, begin to regret that means could not have been found for having the proper disposition made at the outset. Such a means the citizens of Boston have now provided in their Board of Survey, and, although it has only been constituted a few months, it has shown itself of such immense utility that the general feeling of the citizens is one of deep regret that they have not thought of it before.

Though Nature is constantly beautiful she does not exhibit her highest powers of beauty constantly, for then they would satiate us and pall upon our senses. It is necessary to their appreciation that they should be rarely shown. Her finest touches are things which must be watched for. Her most perfect passages of beauty are the most evanescent.—*Ruskin.*

Notes of a Summer Journey in Europe.—IV.

A visit to Pallanza naturally includes the far-famed Borromean Islands, which lie directly opposite. I had only opportunity to visit Isola Bella, a heavy thunder-storm preventing a visit to Isola Madre, which is said to contain some interesting trees. While the terraced gardens of Isola Bella, established two hundred years ago, contain many specimens of interest to an arboriculturist or dendrologist, the whole place is so painfully artificial that one cannot help wishing the fine trees were in some freer, more natural situation. Yet, no doubt, these ten terraces (built on a barren rock, as the guide-books tell us), with their grottoes, fountains, statues and other artificial embellishments, all contributed to complete what in one epoch was considered high-art in gardening. There are many signs of neglect and decadence, and the average visitor is likely to be disappointed in both palace and grounds; indeed, it may be said that the trees and shrubs are the objects best worth a visit to the island, unless it be to get an object-lesson in the taste of past times and to see how thoroughly ugly an artificial garden may be. On approaching the shore one of the most interesting groups noticed is a cluster of some twenty-five or thirty trees of our southern Magnolia (M. fœtida), which were flowering freely at the time of my visit. These trees are from forty to fifty feet high, and, though crowded together, they were the best group noted anywhere. Among many other specimens, which the gardener points out to every party he conducts, are Cork Oaks (Q. suber), three or four feet in diameter of trunk; the tree known as Cryptomeria elegans, which here proves quite hardy and very beautiful; a common Laurel, or Sweet Bay-tree (Laurus nobilis), whose age is counted by centuries; Araucaria Brasiliensis, with a stem a foot and a half through, and also a good representative of A. Cunninghami. Of the genus Eucalyptus there are fair-sized trees of several species, some of them being in flower at this time (July 24th). Large Camphor-trees occupy a conspicuous place, and, of course, the Deodar and Cedar of Lebanon are not left out, for without these no such garden would have been considered complete. Some Acacias thrive in the open air here, and so do great Oleanders. Hovenia dulcis, which we have not yet been able to grow at the Arboretum, is here almost thirty feet high. As it grows in the Himalayas and Japan, as well as in China, it is possible that somewhat hardier forms may yet be introduced.

Citrus trifoliata is in fruit at fifteen feet in height; an example of one of the Club Palms (Cordyline [Dracæna] indivisa) has reached a stature between twenty and twenty-five feet. There are not so many American plants to be seen here as about Pallanza; but among others were noted large bushes of our Candle-berry (Myrica cerifera), while a great specimen of the Trumpet Creeper (Tecoma radicans) has a stem a foot in diameter near the base. Another Tecoma, the handsome flowering Japanese T. grandiflora, fifteen years planted here, was just opening (July 24th) its first flowers of the season. A little-known Asiatic climber of the Pea family, Pueraria Thunbergiana, is here growing to a great height on one of the walls.

I observed in the vicinity of Pallanza that the Forsythias were bearing a great abundance of fruit. It is perhaps owing to late frosts that these plants, in colder regions, rarely bear many pods or perfect much seed.

After Pallanza, Berlin was the next point where an extended stay was made; but stops were made at Zurich, Munich, Leipzig and the establishment of Dr. G. Dieck, at Zœschen, near Merseburg. The journey by rail over the St. Gothard route does not afford much entertainment from a botanical point of view; but the sail through Lake Lugano, on the way to the St. Gothard line station at Lugano, and the glimpses of mountain and valley one gets from the train, are alone well worth the journey. Lake Lugano is a little gem, surrounded as it is by hills and mountains clad with green from summit to the water's edge, yet within sight of snow-covered peaks. The principal occupations of the district are the cultivation of fruits and the entertainment of foreigners. If natural surroundings, climate, etc., count for anything, it would seem as though a finer race of men and women should be developed here than in less-favored regions.

After passing through the St. Gothard tunnels one sees the mountain-sides marked at frequent intervals by narrow perpendicular scars. These are slides where logs are run down. But with the cutting of timber here there is also some systematic reforesting, especially of Spruce, on the lower slopes. The Fig lives fairly well in the open air in many places about Lake Lucerne, but at Vitznau the plants had been much killed by the severity of the past winter. Few botanical notes were

made until Zurich was reached, and the visit to the Botanic Garden here was made during almost continuous rain. This Botanic Garden is one of several Swiss cantonal establishments of the kind, others being at Geneva, Basle and Berne. It was established about fifty-five years ago, and is one of the very few gardens which make a practice of selling plants and seeds, and it has done so from the beginning. The garden is apparently much frequented by the local inhabitants; but it is not maintained at a high standard, and does not contain much of interest to a foreign visitor. The herbaceous collection is comparatively small and uninteresting; even the Alpine Garden is disappointing, and there are few trees worth special mention. A large tree of Cryptomeria Japonica had its tips browned by the severity of the past winter, when the frost was unusually severe, the thermometer registering eighteen degrees below zero (Centigrade) and the lake being frozen over, a rare event.

The Cucumber-tree (Magnolia acuminata) thrives as well here and grows as large as it does when planted at Boston, while Sophora Japonica is of good size, with a trunk two and a half feet in diameter. This Sophora appears to be one of the most commonly distributed of all Japanese trees in European gardens.

One of the most interesting trees in the garden is a specimen of the Clammy Locust (Robinia viscosa), labeled under its synonymical name of R. glutinosa. This has attained a size not often seen in this species, being perhaps forty-five feet high, while the stem is about fourteen inches in diameter at four feet from the ground. A specimen of the Cephalonian Fir (Abies Cephalonica) has a trunk two and a half feet in diameter, while its branches spread twenty feet in each direction.

Lindens, of several species, are largely planted as street trees in Zurich, and the air was fragrant with the odor of the blossoms. One of the shrubs which attracted my particular attention here, and which was also found in several of the squares of Geneva, proved to be Spiræa Lindleyana, a Himalayan species too tender to live and thrive well in the climate of eastern Massachusetts, except, perhaps, in the warm southeastern corner of the state. Under some circumstances this species might be mistaken for the common Spiræa sorbifolia, of which, indeed, it was once considered a variety. But the common and hardier species is much more dwarf in habit than S. Lindleyana, which, at Geneva, was growing in clumps, and ten or twelve feet in height. Moreover, the common species blossoms earlier, and is quite out of flower before Lindley's Spiræa begins. The huge panicles of flowers of the latter are usually somewhat flattened or fan-shaped, while in S. sorbifolia they are cone-shaped or pyramidal. The leaves, too, are very distinct. S. Lindleyana should be a valuable acquisition where the winters are not liable to be any more severe than at Washington.

Arnold Arboretum. *J. G. Jack.*

An Evergreen Shrubbery.

I HAVE often wondered why so few broad-leaved evergreens are planted for winter effect. Perhaps the northern climate is too trying for the best of them, but, south of Washington, the list of these plants suitable for cultivation is a large one. Our climate in this section of West Virginia is colder than that of Washington. We have a good deal of ice and snow, and sometimes the Potomac River, which is but a mile away, freezes over, so that one can skate from West Virginia into Maryland. In our grove at Rose Brake we are now testing a number of broad-leaved evergreens, but cannot yet speak in assured terms of their hardiness.

Nothing adds more to the attractiveness of our home grounds at this season than groups of Mahonias, Laurels, evergreen Thorns and similar plants. In this neighborhood the English Laurel flourishes and becomes a large bush or small tree, with charming foliage of a lively green, reflecting the sunlight from its polished surface.

In the Mall, in Washington, thousands of broad-leaved evergreens are planted, including many Aucubas, which seem perfectly hardy there. These I have never tried, as I think them the least pleasing of their class. Their blotched appearance soon wearies the eye, yet if there were only plain green-leaved Aucubas they would be much handsomer and really very valuable shrubs. The yellow variegation is no objection in the eyes of those who admire variegated Altheas, Dogwoods and Weigelas, but my own taste leads me to use this class of shrubs sparingly, for many of them together produce an unnatural effect.

We have tried some interesting experiments at Rose Brake with plants that are usually considered too delicate to stand the winter in open ground. We leave all Gladioli in their beds with no cover but the leaves which the autumn winds spread over them. One bed, however, which has no large trees in its neighborhood, is left uncovered, and yet the Gladioli live and increase from year to year, and I cannot see that they deteriorate under this rough treatment. Hydrangea hortensis has survived several winters with no protection at all. We are now testing Chimonanthus fragrans, the Deodar Cedar and Phillyrea Vilmoriniana, all duly tucked in with a coverlet of leaves, kept in place with branches of trees. Our small specimen of the great Southern Magnolia has a house made out of a barrel, from the top of which the leaves protrude, green and smiling. Next year I mean to adopt Mr. Massey's suggestion and try the experiment of leaving a Pittosporum in the evergreen shrubbery throughout the winter, as he writes that it withstands severe frost in North Carolina.

We have a beautiful Japanese Acacia, A. Nemu, now six years old, and it has never winter-killed nor led us to believe that it was not as comfortable in its winter quarters as our hardiest trees. It is about twelve feet in height. Mr. Parsons recommends cutting this Acacia down to the ground every year, but this we find quite unnecessary.

For the evergreen shrubbery the catalogues name varieties of evergreen Thorn, a half a dozen Andromedas, Azalea amœna, Berberis dulcis, many varieties of Box, three or four Daphnes, besides Cotoneasters, Ilex opaca, Sedums, the common Inkberry, Furze and two kinds of Irish Heath, Menziesia polifolia and its variety versicolor, which bears pink flowers. From these a selection can be made for a beautiful shrubbery. Backed by groups of Hemlocks, Pines and Spruces on the north, as a protecting rampart against the cutting winds of winter, such a shrubbery might be a delight to its owner, and rival Addison's favorite evergreen garden, loved by the birds.

The different Boxes seem to me too stiff to be altogether pleasing, but that is a matter of taste. I have some very old Box-trees bordering the paths of my vegetable garden, whose antiquity protects them; but I have set out no young specimens in my shrubberies. Instead, I have hardy Oranges, which I think much prettier. For vines we have the Chinese Honeysuckle and the climbing Evonymus radicans. Bitter-sweet is very appropriate to the winter shrubbery, as its berries hang on late in the season, and it forms a pleasant contrast to the heavy foliage of the evergreens. A few Birches are planted here and there among Pines and Spruces for the effect of their white bark, and some rare deciduous shrubs and trees further relieve what might else be the sombre effect of the evergreens alone. Yuccas we find very valuable, and have many clumps of several varieties. Yucca filamentosa, Yucca gloriosa, Yucca recurva, Yucca angustifolia and Yucca flaccida seem unaffected by the snow and ice that surround them, and are a cheerful light green that contrasts well with the darker foliage of our Mahonias, Rhododendrons and Hollies. Yucca filamentosa is, however, the only one we have thoroughly tested, as some of the others are now enduring their first winter in open ground.

Evonymus Sieboldtii is a choice shrub for winter effect, with its profusely borne orange-red berries and its clean, healthy foliage, and the Scotch Broom, Cytisus scoparius, is certainly hardy; and, though it is deciduous, we have given it a place among the evergreens because of the cheerful color of its branches, and its graceful, half-weeping habit. The new variety of this charming plant, which is mentioned in GARDEN AND FOREST, vol. iii., p. 273, as Cytisus scoparius, var. Andreanus, ought to be an acquisition if it were hardy here. It is described as follows: "The bright yellow of the standard and keel of the flowers and the rich velvety maroon of the wings are most effective. It is as easy to cultivate as the type and flowers when only a foot high." Our common Broom flowered when very small, and is a sunny, cheerful plant at all seasons, hardy and brave.

Is it the common English Hornbeam which Addison means when he writes of his garden: "The walls are covered with Ivy instead of vines. The Laurel, the Hornbeam and the Holly, with many other plants of the same nature, grow so thick in it that you cannot imagine a more lively scene"? The English tree as I know it is not very unlike our own blue Beech, a most attractive and small tree. But why is it named in this company?

Following a suggestion in a recent editorial in this journal, we shall plant some scarlet-twigged Dogwoods and Kerrias in our winter shrubbery, and to make it complete we should carpet it with Ground Ivy, Winter-berry and Partridge Vine.

All this will come in time. At present we have a great deal of Periwinkle, which we find of an encroaching disposition, but very desirable for planting under the shade of evergreens where grass will not flourish. In some catalogues Osmanthus illicifolius is included among hardy evergreens. This, with many others, I hope to report on in future. Meanwhile I am sure that any of your correspondents who have facts as to the established hardiness of any shrubs of this sort which are not generally planted will oblige many readers by giving their experience.

Rose Brake, West Va. *Danske Dandridge.*

Winter Rambles in the Pine-barrens.

IN articles in Garden and Forest of last year some of the characteristics of the Pine-barren flora, as seen at the head of Lake Michigan in the winter, were described. There are additional features, especially in connection with deciduous trees and shrubs, equally attractive to the botanist and observer of wood scenery at this season.

Though a familiar tree throughout the eastern United States, and ranging from the Gulf to our northern limits, the Tupelo, or Pepperidge, as it is better known at the west, is not generally abundant, though frequent in some localities. In the Pine-barrens it is seen in the narrow strips of swampy ground or by the borders of the sloughs, where it grows singly or in small groups. As it is apt to stand apart from trees of a similar height, rising from clumps of Willow and Alder, or other lowland shrubs, its isolation helps to emphasize its singularities, and here it is the most picturesque tree of the lowlands, or even in the landscape as a whole. None of its associates has so marked an individuality or a form so strongly outlined. The crooked and elbowed limbs, mostly sloping downward, give the Pepperidge a more pronounced appearance when leafless, since they are abundantly provided with short stiff twigs nearly as stout as thorns. When the longer branches are near the top, making a flattish crown, it resembles a great parasol. Its striking characteristics lead to its easy identification as far away as the eye can make out its form. The largest of the trees here have a girth of but six or eight feet, and are rarely more than fifty feet high, their trunks often bushy with short adventitious branches below the principal limbs. Thickets of shrub-like trees are common, where the stiff twigs and limbs make them almost as difficult to penetrate as a hedge. It is not always a graceful tree, but when covered with glossy leaves in summer has a rare beauty, and when they assume the crimson hues of autumn it vies with the Sumachs in being the most brilliant object in the autumn woods. Sometimes it assumes a symmetrical and very handsome form, with long lower limbs, and those above gradually shortening to near the top. With limbs so sloping as almost to droop, and coming so near the ground that their ends blend with the low shrubbery beneath, we see a tree when covered with glossy foliage as beautiful as any in the forest.

The Paper Birch, a more common tree and always a graceful one, is found in similar situations, but in poorer soil. It rarely exceeds thirty feet in height, though in some of the more fertile spots, where it shares the ground with the White Pine and Elm, may be double this height. It springs up quickly where the ground has been overrun by fire, making thickets of straight, slender trees. The slim white trunks, frizzled as they grow old with loose bits of papery bark, are in sharp contrast with all about them, striping with bands of white the background of darker shrubs and trees. But when standing alone, or when grouped with others of its kind, the intensity of contrast is toned down, and it presents a most attractive picture. The smooth bark of the limbs, and on the trunks of the young trees, is of a lively chestnut-brown, speckled with small gray dots, also contrasting effectively with that of the white bole and larger limbs. The cylindrical catkins stand out a little stiffly in twos and threes at the ends of the twigs, presenting a fork-like appearance very different from that produced by their long and pendulous habit in spring. Sometimes the tree closely resembles the Cut-leaved Birch, with a light and airy spray, drooping when heavy with leaves and forming a flowing outline. It gives a striking effect of local color when seen in rows bordering some of the long, straight sloughs, which run like avenues of water through the thin woods, and the lines of white, formed by the bright trunks, fade into the distance as the eye follows them down the vista.

Rivaling the Paper Birch in the color-effects of its trunk is the American Aspen (Populus tremuloides). It also grows up rapidly in the damper ground of burnt districts, where the smooth, greenish white bark of the slender trees shows conspicuously. The green tinge becomes less marked as the trees increase in size, and the bark assumes an ashen, or even clay color, but always in strong contrast with the mass of trees around, especially in the winter-time when stripped of leaves.

A near relative of the Birch, the Speckled Alder (Alnus incana), is one of the most common of wet-ground shrubs. The smooth stems, with polished, reddish green bark, speckled with gray, show finely in the winter season. The recent shoots are reddish gray, slightly downy, and marked with numbers of small, round yellowish dots. The buds are prominent, of a dark purplish color, and have a shining, waxy coating. Being raised on short, thick stalks, they are somewhat club-shaped. The cylindrical aments are already formed, for it is one of the first shrubs to bloom in spring. They are about an inch long, and hang in clusters of three to six at the ends of the branchlets. Since the bearing shoots curve near the end, the aments almost always point downward, quite in contrast with those of the Birch, standing stiffly outward, and less graceful in this respect than the Alder. They are reddish brown mottled with green, and by their color and position give this shrub features by no means devoid of beauty.

Englewood, Chicago, Ill. *E. J. Hill.*

New or Little-known Plants.

Chrysanthemum, Walter Hunnewell.

THIS seedling Chrysanthemum bloomed for the first time in the autumn of 1890. It is the result of a cross between Mrs. J. C. Henzy, a yellow-flowered variety, and Sachem, a bronze. I had a plant of it in a six-inch pot, grown to a single stem, in order to test its bloom, a plan, by the way, which was recommended by Mr. Gerard, in Garden and Forest, as the best means of testing the flowers of seedlings so as to avoid the necessity of taking up the whole plant. Nevertheless, the seedling's habit of growth was so remarkably distinct that the original plant was lifted, but when it bloomed it did not seem worth keeping, except to use as a parent in future crosses, so that its strong habit could be perpetuated. However, Mr. A. H. Fewkes, of Newton Highlands, persuaded me to give it a trial, and assisted me in the second test. The result was a remarkable improvement on the first year's showing, and Mr. Fewkes secured some superior flowers. Mrs. Henzy, the seed-parent of the new variety, was sent out a few years ago. It has a neat, incurved Japanese flower and a dwarf habit. Its constitution is weak, however, and unsuited to single blooms of a large size, such as are now fashionable, so that it fell out of the ranks and is seldom seen. The pollen-parent, Sachem, was raised by Dr. Wolcott. It bears a semi-double flower, and its only recommendations were a vigorous constitution and an admirable dwarf habit. The flower of Walter Hunnewell (see page 17) is a good orange-yellow, having the finely incurved form of its seed-parent, and the plant shows the distinct and vigorous constitution of Sachem. The flowers are solid enough in texture to keep them from fading, and for pot-culture the variety is an ideal one. It has marked individuality in its good foliage and erect habit, and needs very little staking to keep it in perfect shape. In my experience, also, it produces a greater percentage of crown-buds than any other plant with which I am acquainted.

Wellesley, Mass. *T. D. Hatfield.*

Cultural Department.

Iron-clad Roots.

IN a recent issue of *Rural Life*, Professor Budd, of the Iowa Agricultural College, discusses the subject of root-grafting with both long and short cions and roots, and expresses a preference for long cions on long roots. Of course, this kind of graft, planted as the Professor plants them, with only the top bud of the cion above ground, requires deep preparation of the soil, and a good deal of hard digging in taking up the trees. But he believes that the extra cost and trouble are more than recouped by a much better growth and a much smaller number of second-class and unsalable trees. I am inclined to agree with Professor Budd on this point; and just here I venture to give a warning to the growers of iron-clad fruits in the nurseries of New York and other states outside of the "cold north."

A little more than one year ago the propagators of the new winter iron-clad Oldenburgh-seedling—first known as Dudley's Winter, but since renamed North Star—kindly sent me two trees for trial. I had them carefully set out, but one is already dead, and I can save the other only by banking it in the fall. I did not set them myself, nor unpack them, and the man to whom I entrusted the work failed to notice that they were both budded, four or five inches from the ground, on what have proved to be tender stocks. It is needless to say that no grafted or budded tree can survive its stock, and unless buyers are warned to plant them very deep the trees of this Apple will be denounced, when put upon the market, as a fraud, so far as its supposed hardiness is concerned. Such high working is probably one reason why "New York trees," even the hardiest Russians, are so widely unpopular in the cold north.

Without the least doubt, so long as we are compelled to work our iron-clad tree-fruits upon tender stocks we must put and keep these stocks well down beneath the surface, or mound them up, or mulch them heavily, and keep them so. In nursery work this principle has long been well understood by growers in the iron-clad region; and it is this necessity which has led to the practice, in root-grafting, of working long clons on short roots. The subject has been debated in our horticultural publications and meetings with a good deal of energy, and both nurserymen and orchardists outside of the cold north have taken part in the debate, not always with a

Fig. 4.—Chrysanthemum, Walter Hunnewell.—See page 16.

clear view of the entire situation. The matter of this so-called "whole-root" grafting, which really means the use of a longer or shorter top-cut of the root on which to work the cion, was started by a Missouri nursery firm, and could hardly have originated where the necessity of putting the tender root as far beneath the surface of the soil as possible is fully comprehended.

The necessary depth for planting out grafts of iron-clad varieties, worked on roots grown from seeds of tender varieties, can only be gained by the use of long cions, and these must extend far enough below the surface to insure sufficient moisture about them to cause the putting forth of strong roots from the cion itself. Success in this depends upon the height of permanent moisture in the soil. In northern New England so great a length of cion is not needed for this purpose as in many parts of the west, and especially in the dry states like Kansas and adjoining portions of Missouri.

But why is so little said yet about using iron-clad seedlings for stocks? Is there any good reason to suppose that the seedlings of Oldenburgh would not be as hardy as their parent? Have we not sufficient ground for believing that if we plant the seeds of the iron-clad Apples of north central Russia, the seedlings grown from them will be sufficiently hardy to be used and planted in the same way as more tender seedlings are in a milder climate? Not only for root-grafting, but for budding, will not Oldenburgh-seedlings serve and answer all our needs in the cold north? I read nearly everything I can get hold of on these matters, and have sets of the proceedings of all the horticultural societies of the cold north; but I do not recall any discussion or even mention of so important a question.

It is very doubtful whether our American iron-clads, which are, so to speak, mere accidents, could be reasonably expected to give us reliable seedlings for this purpose; and I should not care to plant seeds of Astrachan, or any apple of south Russia, to grow stocks for budding, or even grafting. But I believe it is fully time to begin some exhaustive tests to settle this not unimportant problem. Some may ask why so little has been done about it. I can only say, for myself, that as I have a ready sale for all my Russian apples, and never have ground any for cider, I have always sown the ordinary Apple-seeds obtained from dealers. But I mean to keep the matter in mind, and I write this to urge the same course upon others.

Newport, Vt. *T. H. Hoskins.*

Anthracnose in Bean-seeds.

I HAVE received a letter from a large seed-house asking for information concerning the anthracnose in Bean-seeds, and Mr. Lyon, in his article, "Damping Off," in GARDEN AND FOREST, vol. iii., p. 599, virtually requests the same thing.

The fungous disease of the Bean has been known for many years, and my purpose here is only to record a few observations and suggest a feasible method of avoiding serious trouble.

The fungus (Colletotrichum Lindemuthianum) most frequently attacks the pods of the bean when they are partly grown, forming deep dark pits and lessening the yield. The fungus spreads rapidly, from pod to pod, in the market-place, and a spot may be established by inoculation upon an otherwise healthy plant in thirty-six hours. Whatever may be the true life-history of this fungus, it is certain that it can exist from one season to another in the mature beans themselves, and when these diseased seeds are planted the best possible condition is given for perpetuating the disease.

Beans of various sorts were examined, and a large percentage of some of the Wax sorts were found defective, particularly in the region of the eye. Instead of the natural color and plumpness, the coat would be brown and wrinkled. When such beans were split open the rusty appearance would be found extending half-way through the seed. By placing such imperfect beans in a dish in a moist chamber and keeping them moist, a rank growth of the fungus quickly developed upon the diseased portions and rapidly spread over the healthy portion of the seeds. The spore-patches were often so abundant as to almost completely cover the surface of the beans, and the spores developed in countless numbers. As a rule, bacterial fermentation soon after set in, and the small heaps of halved beans became offensive masses of decay. This only shows that the beans are rich in those substances enjoyed by the fungi, hence the rapid development of the anthracnose. A more careful examination of the diseased beans when first split and before they had remained for a time under favoring conditions, showed that the surface in some instances was already studded with the spore-masses, thus demonstrating that the dry beans in the market and seed-stores may be infested with the disease.

The next point was to note the behavior of the seedlings. Those from good seed came up promptly and looked well, almost without exception, but only half of the diseased seed germinated under the same conditions, and the plants were sickly and spotted with the disease. Several of the plants were so badly infested that there was scarcely a healthy place to be found from the root to the leaves. From such plants it was an easy matter to introduce by a needle the infection into the tissues of a healthy stem.

The next step was to test the value of treating the diseased seeds with some fungicide, and it was found that the best results were obtained by soaking the seed for one hour in a solution of three ounces of the carbonate of copper, one quart of ammonia-water, and four and a half gallons of water—that is, five times the strength of the standard solution for grape-rot. From comparative tests it can be safely stated that the product from untreated seed was diseased four times as much as that from the copper-soaked seed. These experiments teach that one method of reducing the disease is to have seed that is free from the anthracnose. This cannot be ascertained without a microscopic examination, but a brief soaking in a fungicide, while it does no apparent harm to seeds free from the disease, has the power of greatly reducing the amount of it in plants from infected seed. Unlike spraying plants in the field, the soaking of the seed is a simple and very easy matter, done once for all at the expense of a few cents for an acre; and, therefore, this method is recommended wherever the disease threatens the crop.

Rutgers College. *Byron D. Halsted.*

The Carnation Rust.

THE note by Professor Halsted on the Carnation Rust (vol. iv., p. 596) has called forth many letters, from which it appears that this fungus, Uromyces caryophyllinus, has already

Fig. 5.—Uromyces caryophyllinus: pustules on the stem and leaves of a Carnation.

obtained a very wide distribution in this country. It is said that some of the growers along the Hudson River have known of this pest for three years. Professor Galloway, of the United

States Department of Agriculture, writes that rather more than a year ago he had received from Professor Taft, of the Michigan Agricultural College, Carnation-sprigs badly affected with this fungus, and he then wrote that, so far as known, Uromyces had never before been found in the United States. He added that it might prove troublesome if it once gained a foothold, and therefore he thought it well to call the attention of florists to it. We learn of it in Michigan, Ohio, the vicinity of Philadelphia and other parts of Pennsylvania, and in the neighborhood of Boston.

Little can be added to what has already been said as to the effects produced on the plant by this fungus. In order to make it easy of identification we herewith reproduce two figures from Briosi and Cavara's work on the *Fungi of Cultivated Plants*, which Professor Galloway has been kind enough to send us, so that all growers may be able to identify the disease. On page 18, Fig. 5 shows a sprig of Carnation affected with the rust, with the pustules appearing on the leaves and stem. A thin cross-section through a leaf-pustule is represented in Fig. 6, from which it will be seen that the spores (*a*) are borne on short stalks.

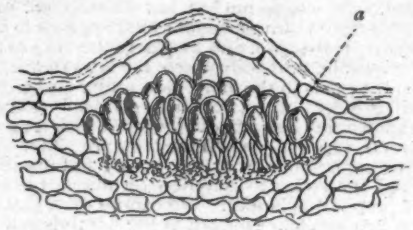

Fig. 6.—Uromyces caryophyllinus.—See page 18.
Cross-section of pustule. *a*, Spores.

Where Carnations are kept cool and dry—that is, with abundance of light and air—it does not spread so rapidly nor grow as vigorously as it does under other circumstances. It is worse in those portions of the greenhouse where the pipes are hottest. Some varieties are much more susceptible to the disease than others. Mr. E. G. Hill, of Richmond, Indiana, finds that the heavy-growing and fleshy-leaved varieties suffer the most. Mr. Lonsdale advises that great care should be taken in selecting cuttings for next year's plants, and these should be treated to a dip in some fungicide, like a weak solution of the Bordeaux mixture, before they are inserted in the propagating-sand, and they should be sprinkled once or twice a week afterward to keep it in check. Of course, such ordinary precautions as picking off the diseased leaves, removing diseased plants, and keeping young plants as far as possible from old ones which are supposed to be infected, should not be neglected. One grower writes that he fears that the Bordeaux mixture will poison his soil, a possibility which has been suggested by Colonel A. W. Pearson in this journal. But Colonel Pearson also suggested that the copper mixture could be used for Grape-rot in a much more diluted form, and it is not improbable that experiment would show the same to be true in the case of this fungus. Besides this, it is not likely that the soil in the pots or benches would become sterilized by the cautious use of copper within three or four years, even if there was a genuine danger from this source, and as greenhouse soils are frequently changed, this danger should not forbid the use of the copper mixtures.

Fuchsia, Dunrobin Bedder.

IT is a great gain to secure for the garden a dwarf hardy Fuchsia, free, compact and useful either as an edging to large beds or by itself to form a distinct group on the grass. We have such an acquisition in the variety Dunrobin Bedder, a form of the popular F. Riccartoni, one of the hardiest and most beautiful of Fuchsias; it was raised by Mr. Melville, who has charge of the interesting gardens at Dunrobin Castle, Sutherland. He hybridized F. Riccartoni with the greenhouse varieties, and out of about one hundred seedlings which he managed to bloom this was selected for its unusual dwarfness, compactness, vigor and freedom of bloom. I first noticed it in the gardens of the Royal Horticultural Society, Chiswick, where it had been sent for trial, and was impressed by its distinctness and beauty. It is perfectly hardy here—at least it has withstood the trials of ten winters in Sutherland. In seasons of exceptional severity the plants are cut down to the ground, but not killed, and they grow freely again with the quickening warmth of spring. Its great charm is as a bedder, and it may be used for edging or as a groundwork to a bed of taller Fuchsias. Mr. Melville propagates this Fuchsia in the same way as ordinary bedders—that is, by putting in several cuttings in a five-inch pot in August or September. To obtain an early display of flowers the cuttings are potted off singly in the following March, and a quick return in the way of bloom is secured. The old specimens will also provide a feast of color if they are lifted before touched by frost, placed closely together in a cold frame, and pruned a little in the late spring before again occupying their place in the garden. Many uses for a dwarf, hardy, vigorous plant like this will suggest themselves, and we have seen it used to advantage as a window-box plant, also in large vases.

Chiswick, England. *Vincent Cook.*

Hybrid Violas.—Now that the owners of gardens are making preparations for the spring and summer allow me to suggest the trial of hybrid Violas, or, as they are sometimes known, the Tufted Pansies, which do not seem as much cultivated as their merits deserve. These plants are hybrids of various alpine Violets with some admixture with the florists' Pansies. While some of the varieties have the tufted habit which has led to the naming of the race, this habit is not universal, and most growers favor the "Hybrid Violas" as a more correct name. The present race of Pansies is the result of long-continued selection, having always in view, as one of the main points, the increase of size. While mere size is not objectionable, a large proportion of modern Pansies are coarse, with colors very much blurred or run. Of course, there are fine collections of Pansies with pure clear colors well defined and very satisfactory in every point of view. The hybrid Violas, while much resembling Pansies in foliage and growth, are quite distinct in effect, having a beauty of a daintier order. The flowers, similar in form to good Pansies, are usually about half the size, and are, in good varieties, without a trace of coarseness in texture and of the most satisfying purity of color, to which good qualities many of them have in addition a delicate yet distinct fragrance. They are very free-flowering and make capital bedding plants. They can be planted out as early in the season as the ground can be made ready, being as hardy as the Pansy. They may be secured from any English hardy-plant nursery, and it is well in ordering to arrange for their coming by mail, a much surer plan for soft plants than the express, with the long delay at the customs. Some of the best kinds in cultivation are Countess of Kintore, Quaker Maid, Ariel, Skylark, Violetta, Countess of Hopetoun, Duchess of Sutherland, Sir Joseph Terry, Archie Grant, Puritan, Ardwell Gem, King of Yellows.

Primula floribunda.—This Himalayan Primrose is one of the brightest of greenhouse flowers, and much more attractive in color than P. obconica. Nothing brightens up a garden as much as masses of good yellow flowers, and the color of this Primrose is of the clearest deep golden hue. As its name implies, it flowers freely and continuously. While the scapes are not as hard and rigid as those of P. obconica, it is useful for cutting for dainty flower-arrangements. It is readily grown from seed, which germinates rapidly, and seems to thrive in a moderate warmth and not too moist an atmosphere. Some plants in cooler quarters have not been quite happy, and probably from fifty degrees to sixty degrees Fahrenheit is a suitable temperature. The type of this plant has small flowers, but there is a variety with large ones of the same color. It was with regret that I threw out P. obconica, after becoming a victim to its irritating spicules, though, curiously enough, I had grown it several years and had not been affected till attention was called to its properties. Aside from this one fault, it is one of the most valuable minor plants, being always covered with pretty, useful flowers. In the hope of filling its place, I am watching carefully a pan of hybrids, P. obconica × P. cortusoides amœna, from which, I am assured, there will be plants with larger flowers and a range of colors from white to red. This seems a promising cross, though there is more than a suspicion that there will be some of those dreary blue-reds of P. cortusoides to weed out. My principal wish is that the cross may ameliorate the structure of the foliage so that it may prove innocuous. With such foliage and flowers larger than the type there would be a gain indeed.

Elizabeth, N. J. *J. N. G.*

Galanthus nivalis, var. Octobrensis.—This Snowdrop flowers here from the beginning of October until November, and is then succeeded by Galanthus Corcyrensis, the latter opening the first flowers in the first week of November, and continuing for about six weeks. There is not much difference in the flowers,

only the segments of G. Octobrensis are a little narrower than those of G. Corcyrensis; the principal difference is in their time of flowering, the latter being always four weeks later. We cannot force G. nivalis; but when these autumnal sorts have become more plentiful we shall have Snowdrops in bloom from September to April, and as people are always fond of popular flowers at an uncommon time they will find a ready market. Twelve bulbs in a comparatively small pot will make a beautiful group. I may add that by proper treatment and careful selection of seed, they will, in time, improve in form and size, so that the flowers of my best seedlings have segments of over an inch in length.

Baden-Baden. *Max Leichtlin.*

The Forest.

Management of the National Forest-reservations.

At the late meeting of the American Forestry Association, Mr. B. E. Fernow, chief of the Forestry Division, Department of Agriculture, read a paper on this subject, from which we make the following extracts:

The objects for which National Forest-reservations can reasonably be asked are mainly of an economic and not of an æsthetic nature.

The situation briefly is this: The major part of the public domain, which was wooded, has been disposed of without regard to the value of the forest, either as marketable material or as a protective cover. A large part has been and is being wantonly wasted and destroyed by fire every year. Now it is proposed to change this policy. Instead of holding this property in the hands of the Government for eventual disposal, it is intended to withdraw at least parts of it from entry and to keep it in permanent possession and control of the Government, with proper recognition of its special value as being wooded.

The law of March 3d, 1891, authorizes the President to reserve wood-lands, and by public proclamation to declare their establishment and fix their limits.

As far as the law goes, the object of the proposed reservations is left undefined, as well as their number or extent. I may, therefore, only define the objects for which at present they are probably authorized and what the aim and the methods of their management, separate from that of other public lands, should be.

While in the minds of some, inspired with a general love of the woods, the whole forestry problem is more or less a sentimental matter, and the uppermost idea is, that to stop vandalism by the axe and fire, to preserve natural scenery and to create parks for recreation and hunting-grounds, is the aim of the forestry movement, and of these reservations in particular, I must protest against placing these ideas in the foreground. It is perfectly legitimate for a civilized nation to set aside and preserve as national monuments such areas as the Yosemite Valley, the Big Tree groves and the wonders of the Yellowstone Park; but to withdraw large areas of land from private occupancy will be warranted only when well-substantiated, economic reasons for such withdrawal exist, and objects of a more important communal interest are thereby to be obtained.

These objects I consider to be twofold. First, to assure the communities growing up with wonderful rapidity in our western country of a continuous supply of wood material; second, to assure a continuous forest-cover of the soil on hill and mountain-slope for the purpose of stable soil—conditions and equable water-flow. Just as the first of these economic objects can be attained without frustrating the last, just as the forest can be made to yield continuous supplies without destroying it, just so may the æsthetic and sanitary objects be satisfied by the way without need of curtailing the economic ones. These economic objects, namely, continuous supply of timber and such forest-conditions as will secure favorable water-conditions, can alone be considered as the objects of management to be discussed here.

The difficulties which stand in the way of a management that is to secure these objects are of two kinds, namely, those opposed by nature and those opposed by man.

Excepting on the western slopes of the Pacific mountain-ranges, the climate of the largest part of the territory concerned is such as to render forest-management for reproduction and reforestation difficult; this difficulty has been increased by the action of man in baring slopes and burning the fertile leaf-mold, thus reducing the chances of germinating seeds and young seedlings. Difficulties of this nature can be removed only after careful study and experiment in the field. We will, therefore, have to start with a simple, common-sense management, and will have to leave the development of better forestry methods to future years, providing only the opportunity of gaining necessary knowledge and experience for the best results.

The main difficulties to be met for the present are those opposed by man.

The social and economic conditions of our western mountain states are peculiar, but they are easily understood and explained when we realize that upon their 1,000,000 square miles not quite 3,000,000 inhabitants are to be found, or only three to the square mile, and if we deduct the population of the cities, a little more than three to every two square miles. This scarcity of population, together with the spirit of independence and self-reliance born and remaining from the pioneer days, when each having single-handed to stake out and defend his own homestead, and to provide for himself and family in the wilderness, was under the necessity of using natural resources, accounts for the prejudice against the curtailment of accustomed and at one time necessary privileges. A feeling of freedom is created in him who finds but little friction with neighbors; he becomes a law unto himself, and government, with which he has but little touch, and which does not understand him or benefit him, appears to him often an unnecessary restriction, and he places the laws of necessity, as he conceives them, readily above the laws of the land.

If this spirit exists in the bona fide settler and citizen, it exists to a still greater degree, bordering on absolute lawlessness, in the irresponsible class of adventurers which a new country always attracts, especially when the laws are either incompatible with existing conditions or are poorly and unsatisfactorily administered for lack of discretion on the part of officers or for lack of proper machinery. We cannot deny that there has been much incompetency shown in the administration of the land, and especially the timber question, by the United States Government, so as to lead western communities to chafe under improper restrictions and to believe a change for the better impossible or impracticable.

To make more intelligible the difficulties arising from this state of things, a brief extract from the paper by Mr. Bowers, presented at the last meeting of this association on the Conditions of Forests on the Public Domains, may be of service.

He says: "Under the act of June 3d, 1878, applying to Colorado and the territories, settlers and others were permitted to cut timber for mining and agricultural purposes from mineral land. Before cutting timber for local use the settler can hardly be expected to sink a shaft or hire a chemist to determine whether the land is in fact mineral or not. He cuts where most convenient for him, without knowing what the character of the land is, and takes the chance of being prosecuted. Not one acre in thousands throughout the region to which this act applies is known to contain minerals, but it is the only act under which timber may be taken by settlers and miners in this great region. Consequently this whole population is forced to steal one of the necessaries of life. To the miner and settler of that region the use of timber from local supplies is as absolutely necessary as the use of the water that flows by him, or of the air that surrounds him, and no plan of management which fails to recognize this can ever hope to be successful. The settler, after taking a piece of Government land in the vicinity of the mountains, finds immediate use for timber for the construction of his buildings and fences, and he naturally helps himself. The prospector and miner and the great mining companies have the right to cut timber growing on the mineral lands about them; the railroad supplies itself from the adjacent timber, and the settler can hardly be blamed for doing the same. Oftentimes, as a community of settlers becomes sufficiently large to support it, a small saw-mill springs into being, and the wants of this little community are supplied by the local mill, drawing its timber from the Government land without any authority whatever. Both of these classes, the settler and the local mill man, are then criminals under the law, and are also liable in a civil action for damages, but before a local jury prosecutions almost invariably fail.

"The sympathies of the entire community are always with these depredators of the public timber, and quite often the jurors themselves have been freely using such timber. Indeed, it is a matter of the greatest difficulty to induce a grand jury to indict persons who have confessedly been cutting Government timber for years to supply their saw-mills, the product of which is used quite likely by the very members of the grand jury."

One striking difficulty in establishing the reservations themselves is that much of the land that should be reserved is as yet unsurveyed, other parts are subject to prior rights or are

expected to be included in railroad grants. In fact, to make a success of this movement and to establish a thorough-going forest-policy, it will in the end become necessary, not only to reserve all the remaining timber-lands, but also to buy up such interspersed parcels held by private owners as destroy the compactness of the reserves, and thereby impede their economical management.

It is an old experience that the greatest difficulty in breaking up old and introducing new methods comes from the momentum of habit and established usage, and the resistance of the momentum to a change of direction increases with the increase of friction. Hence, to make innovations successful, they must not be made abruptly, but must adjust themselves as much as possible to existing conditions, and be allowed to develop gradually into new systems. The spirit, then, which will oppose any new policy that smacks of restriction, must be overcome by judiciously legalizing such uses as are permissible, and controlling their exercise with the least friction.

To make such a control possible, officers of discretion, tact and, at the same time, strong administrative capacity are necessary, and legislation, devising management, must be content to indicate general principles only, leaving the details to the administrative officers.

The management must provide, (1) proper organization of an efficient service; (2) protection against theft, fire or other damage of the property; (3) regulation of the occupancy and the use of the reservation by citizens; (4) a system for cutting the crop and marketing it according to the needs of the population; (5) reproduction of the crops and maintenance of proper forest-conditions.

The principles which should underlie such management have found expression in Senate Bill No. 1779 of the Fiftieth Congress, and may well serve as a pattern for an administration of less general character.

The modifications, which are necessitated by only a partial reservation of wood-lands into single detached reserves, will suggest themselves. One point needs to be constantly and strenuously insisted upon, which is, that no management can be successful unless it be properly provided with machinery. Without managers there is no management, and without guards there is no protection. Hence a well-organized force of officers is a conditio sine qua non. As usual, it is the question of men, not of measures, that presents the real difficulty.

Mr. Fernow then proposed a system of administration of which we only have space to give a mere outline. The reservations should be under a central bureau co-ordinate with the General Land Office and under the Department of the Interior. Each reservation should be controlled by a responsible superintendent, assisted by an adequate force of rangers, each of whom is responsible for a district. Management of forest-property especially requires permanence, and therefore superintendents should have positions during good behavior, and the rangers should be appointed with their approval. As an additional safeguard, inspectors should be appointed, each of whom should have a number of reservations under his charge, and, by visits and otherwise, keep the central administration advised of local needs. In the matter of regulations, provision should be made for restoring agricultural lands to settlers; for giving opportunities to prospect for minerals; for issuing permits for hunting and fishing; and licenses for timber-cutting under proper restrictions. But whatever scheme of administration is devised it must be simple, tentative, capable of development into a more comprehensive system, with the application of finer methods of forestry added as experience shall teach them. Mr. Fernow concluded with the hope that there would be no need of inaugurating a government for detached reservations, but that Congress would pass a bill for the withdrawal of all timber-lands from entry and for their general administration, since nothing short of such a measure would satisfy the needs of sound forest-policy.

Correspondence.

Do Varieties Run Out?

To the Editor of GARDEN AND FOREST:

Sir,—I have read with interest Dr. Hoskin's article (see vol. iv., p. 593), but I can hardly endorse his view that the weak varieties may run out even under favorable conditions. The decision of this question seems to hang upon the influence of propagation by different methods. In the economy of nature there are several methods of multiplication, that by seeds being more nearly universal, but I cannot see why it is more natural than increase by runners, as in the case of the Strawberry and some other plants. If we lay aside the great changes which have occurred in climate and other conditions during the past ages of the world, and which are likely to occur again, I suppose that no one will hold that seedlings of a Chestnut or an Oak or any other tree will have their longevity diminished on account of the old age of the parent tree. What is the ground for supposing that a plant, produced at the end of a runner, is more likely to feel the effect of the wearing out of the original plant than is a seedling?

In the instance of a Strawberry the plant that forms at the end of a runner and roots in the soil is soon capable of sustaining an independent life, as a new edition of the original variety, and ready in turn to throw out another runner for successive editions; and I can see no reason why the plant at the hundredth thousandth remove from the original differs in vigor or longevity from seedlings at a later removal. Some plants increase by throwing up suckers, others from bulbs and rhizomes, others from the tips, and these plants seem to have the same vigor as seedlings. Now, why should multiplication by cuttings or grafting differ in vigor from individuals produced in any other way? The entire practice of horticulture is based on the theory that these cuttings produce new plants, which are essentially individuals, with a life of their own and with no dependence on the parent.

As to the practical bearing of the question Dr. Hoskins says that the Fameuse Apple is not doing as well now around Montreal as it formerly did, and leaves us to infer that this may be the possible result of the running out of a weak variety. It may be that local causes produce the difference, for the Fameuse here is more vigorous, and quite as productive, and gives larger fruit than it did in Massachusetts thirty years ago. The trees standing in nursery-rows show no inherent weakness. Wilson's Albany Seedling Strawberry has often been quoted as an example of running out, but it is still grown in many places, and wherever it is said of the Wilson that "it does not do as well as it used to," there may be sufficient reason for the change. Strawberry rust was unknown in this section a few years ago, and the Wilson is peculiarly liable to its effects. We are, therefore, growing varieties which are less susceptible to injury from this pest. Whenever a fresh importation of plants is made from some distant place where this rust does not prevail they show all their early vigor. On the other hand, the Pearl, which has only been in existence a few years, and which is a vigorous variety under favorable circumstances, rusts so badly that it is a total failure in four cases out of five.

Dr. Hoskins and many others seem to think that a variety with a weak constitution is liable to run out. Of course, if naturally weak, it would be more susceptible to unfavorable conditions, but only so far as these conditions extend, and this is no proof that any given variety has a term of existence, and when the destined time for its death comes that the variety will cease. I have never yet seen any proof that any good variety with sufficient vigor to carry it through a course of propagation up to maturity could not be made to live indefinitely, if the surrounding conditions are in all respects equally good with those under which it was produced.

Hammonton, N. J. *William F. Bassett.*

[This is one of the mooted questions in horticulture, but facts which seem to have weight on one side or the other are always interesting. It is argued by some that since every seed has two parents, seedlings are more likely to inherit the power of adapting themselves to a wider range of conditions than plants propagated by other methods. On the contrary, many plants, like Horse Radish and the Banana, have been cultivated for generations without the use of seed.—ED.]

Winter Vegetation on Florida Sand-dunes.

To the Editor of GARDEN AND FOREST:

Sir,—On the sand-dunes at Pablo beach, seventeen miles east of Jacksonville, the Water Oaks and Live Oaks are shrubs of from two to four feet in height, their dark greenness being emphasized and enlivened by the pale and radiantly forked fingers of the omnipresent Saw Palm. Around clumps of these three, Black Nightshade and a Ground Cherry, Physalis viscosa, were, with the very common Heterotheca scabra, mildly flowering this mid-December day.

Under the Saw Palm's leaves the brown and dead stems of a Eupatorium were observed at many points, and where the sun has fairer play a pale, brownish gray Croton, C. maritimum, a prostrate Rock Rose, Helianthemum Arenicola, and an equally low but grayer evening Primrose were evidently

enjoying life. This last is Œnothera sinuata, var. hemifusa, and here exhibits two shades of hoariness and two pronounced variations in the toothing of its leaves. The little, clinging, short-petioled and pure white-flowered Oldenlandia rotundifolia seemed to be making an heroic effort to save the sand-hills from removal by the winds of ocean, but the size of its spread seemed hardly likely to give its scheme any large measure of success. It surprised me to find this diminutive plant so high on the dunes in soil apparently so dry. Upon these same inclined and shifting surfaces a spreading composite, supposed to be of rather recent introduction, occurs frequently. This is Acanthospermum xanthoides, with heads which, when their fruit is mature, resemble minute, especially crabbed specimens of the five-rayed star-fish. This was in flower, as was also another equally modest member of the same order, Eclipta erecta. With the Eclipta were the strict-stemmed and blooming Samolus floribundus, the prostrate and also blooming Herpestis Monniera, and the creeping Lippia nodiflora, not yet showing its heads of flowers.

The Lippia and Herpestis had dipped into the white-lined, quietly flowing sulphur-water brooklet, while following them and holding above their stems its peltate leaves appeared the umbelled marsh Pennywort, Hydrocotyle umbellata, as careless of the season set by the manual for exhibiting its flowers as many another of the lower-growing species. I brought away with me the dead calyx-decorated stems of Teucrium Canadense, but had rather have secured a single stem of the Youpon, densely set with drupes, than aught else. This seaside Holly covered perhaps more space than any other one plant growing back of the dunes, but it lacked just here its handsome red berries, not a simple specimen in fruit being seen by me during my several hours' stay.

Jacksonville, Fla. *B. F. Leeds.*

Recent Publications.

Japanese Art in the Arrangement of Flowers.—I.

The Flowers of Japan and the Art of Floral Arrangement. By Josiah Conder, F.B.I.B.A., Professor of Architecture and Architect to the Imperial Japanese Government. With illustrations by Japanese artists. Tokio, 1891.

This most beautiful, most novel and interesting book is of quarto size, and is illustrated by fourteen full-page plates in color and forty in black and white, as well as by many cuts in the text. It is handsomely printed and is charmingly bound in parchment covers decorated in color. All the drawings, which include landscape and garden views with figures, are excellent examples of Japanese draughtsmanship and printing, and no more need be said to prove their excellence. There is only one fault in the make-up of this admirable volume: the silk strings which bind the sheets together are inserted so close to the edge of the text that it is difficult to open the pages wide enough for perusal.

In his preface Mr. Conder says that his book is the result of the interest excited by a paper on the subject which, in 1889, he published in the *Transactions of the Asiatic Society of Japan*. He has now supplied a much larger amount of information, which gets triple value from its profuse illustration, but has cast it in a simpler shape. The subject is so unfamiliar to most readers and Mr. Conder's treatment seems so detailed to western minds that it is impossible to review the book in any limited space. Every chapter is significant; almost every paragraph is suggestive; and an attempt to mark passages for quotation would leave no stretch of margin untouched. Of course, some of the facts which Mr. Conder makes plain have been noted in a more or less casual way by a hundred travelers in Japan. But none of them, perhaps, has ever before been so clearly set forth, and nothing previously published in our language approaches this book in its explanation and illustration of the whole fascinating and complicated subject; but how complicated, how subtile, emblematic, poetic, religious, and even philosophic and historic, are the ideas with which it is inseparably connected in the Japanese mind, one would never fancy until he has had Mr. Conder for his guide.

Mr. Conder makes no attempt, he tells us, "to discuss the different schools of flower-design, each of which lays claim to be the only true exponent of the art, and to possess secrets unknown to rival teachers. A study of the different theories of these schools, and of designs illustrated in their published works, shows that the principles of arrangement followed deviate in no important points." Three chapters are devoted to the flowers of the country, classified as those of spring, of summer and of autumn. In the first we read of Plum-blossoms and Cherry-blossoms—of the various ways in which they are cultivated and are enjoyed. The second tells us about the Wistaria, the Iris, the Pæony and the Lotus; and the third about Chrysanthemums, Maples and the "seven plants of autumn," by which term are meant the Lespedza, the Morning-glory, the Eulalia Japonica, the Valeriana villosa, the Valeriana officinalis, the Pueraria Thunbergiana and the Carnation. These, we are told, though comparatively ineffective individually, are prized at a season when flowers are rare, and gather "importance and interest in combination." But much the larger part of Mr. Conder's book is absorbed by the eight chapters on Floral Arrangement devoted to Flowers According to their Months, History and Theory, Lineal Distribution, Selection of Material, Flower Vessels, Position of Flowers in Rooms, Ceremonial and Etiquette, and Practical Examples.

"The arrangement of cut-flowers in vessels of various kinds," says the author in an introductory passage, "has become with the Japanese a decorative art of considerable refinement, compared with which the western methods of floral composition appear but haphazard combinations. The bouquet, the wreath and the garland, all depending for their beauty upon the close massing of blossoms and greenery in luxurious confusion, bear no resemblance whatever to the more austere and open combinations of the Japanese. The fact that many of the most charming flowers of the country are those of trees, the blossom-clad twigs of which it is impossible to arrange in closed and rounded masses, may in some manner explain the open, lineal character given to floral designs; but the same treatment is applied equally to flowering plants and grasses which lend themselves more easily to the European method of grouping. The peculiarity of treatment noticeable in these flower-arrangements, is closely connected with the Japanese manner of observing and enjoying floral nature. Whereas the eastern amateur devotes his attention mainly to the blossoms, the Japanese lover of flowers bestows his admiration on the whole character of the plant or tree producing them. The rugged nature of the Plum trunk, with its straight, stiff shoots, or the graceful sweep of the branches of the Weeping Cherry, are inseparably associated with the beauty which the blossoms themselves possess. The lines of branch and stem, the form and surfaces of leaves, and the distribution of buds and blossoms, all receive their full share of attention. The loveliest buds and blossoms torn from their stems and crushed together in a mass, with ferns or other greenery between them, convey to the Japanese mind no idea of floral art or beauty. The art under consideration is, in fact, based upon the representation, more or less conventional, of floral growth; and principally for this reason the compositions are made to assume an open character, in which the individual forms of branches, stems, leaves and flowers are all clearly expressed. The Japanese term 'Hana,' translated as flower, has, in the art of floral arrangements, a much wider signification than its English equivalent. Among the so-called Flowers of the Season are included certain evergreens and other flowerless shrubs and trees, some of which hold very high floral rank. The Pine and Bamboo, for example, both occupy a very important place in what are called Flower-arrangements. And the Maple, with its reddening leaves, is used as one of the principal flowers of autumn.

"Seasonableness in the choice of material is one of the leading principles which guide the designer. The luxurious taste for designs, as associated with the idea of rarity, is diametrically opposed to the rules of the art under consideration. Flowers blooming out of their proper season are, with very few exceptions, rejected for floral compositions, which are intended, in a manner, to be expressive of the particular period of the year. April blossoms used in any other month would appear to the flower artist as incongruous and out of place as would be winter clothing worn in summer-time. It therefore naturally follows that a proper cultivation of the Floral Art requires a thorough acquaintance with the nature and growth of all trees and plants employed; and even a close observation of the varying characteristics of the same plant during different seasons, in the case of those which are common to several months. The Flag, or Iris, for example, which is common alike to certain months of spring, summer and autumn, has a peculiar bend and vitality in its leaves, and a different length and vigor in its flower-stems, at the various periods of its growth; these distinctions are all kept in view when employing this flower in compositions."

To explain what the Japanese artist has to learn before he can begin to practice the art of flower-arrangements, Mr. Conder then gives long lists of the plants appropriate to the

different months of the year, and notes those which are suitable for felicitous occasions and those which, on the other hand, are called "ominous."

"Considerations of good or evil luck," he says, "enter largely into the choice of flowers for floral arrangements, especially when employed as decorations for occasions of rejoicing." Those which are reputed to possess poisonous properties, even if this be in their roots alone, are objected to at any time, and all flowers having a strong odor are considered unsuitable for placing before guests, a fact which certainly seems strange to the western mind. The Japanese, it may be said, do not feel as we do that the odor of a flower adds to its attractions from the point of view of sentiment. Mr. Conder then shows that the art of floral composition consists of combinations of two or more kinds of growth, and that in these combinations, not only as regards the actual manner of grouping, but also as regards the preliminary question of selection, the Japanese artist is guided by rules which to us seem curiously arbitrary and subtile. The fact that two flowers grow together at the same period of the year by no means justifies their being placed together. "Sometimes," says Mr. Conder, "too close a resemblance in form or color is the reason of the objection; in other cases, similarity of species, or of locality of production, leading to redundancy of expression in the composition, is the cause of the dislike. The Peach and the Cherry, for example, being both flowering trees and somewhat similar in character are not considered suitable in combination."

We cannot follow the author through his most interesting chapter, called "History and Theory," where he examines into the origin of the now complex art of floral arrangement, and the myriad meanings which the Japanese read into their arrangements. In beginning his detailed analysis of Japanese flower-arrangements he speaks first of "Lineal Distribution." "The lines or directions," he says, "taken by the different stems or branches form the basis of all compositions. . . . The treatment followed may be likened somewhat to the methods employed of distributing carved foliage in architectural panels. The surface of the water in which the flowers are placed is technically considered to be the soil from which the floral growth springs, and the designer must here convey the impression of stability and strength. However good the upper lines of the composition may be, a weak springing at the base deprives it of life and vigor; for it must be remembered that not flowers alone, but floral growth and vitality, are to be expressed in the designs. . . . In the distribution of the principal lines of the composition from the point of their separation, the artist studiously avoids an equal-sided or symmetrical arrangement, but he obtains a balance of a more subtile kind, which is at the same time productive of a pleasing variety of form. Balance and harmony without repetition is a governing principle in this as well as in other Japanese arts." Many pages of careful description and many outline cuts then explain the careful way in which the Japanese arranges his main stems in a flower-group, the arrrangement being sometimes bi-lineal, sometimes tri-lineal and sometimes five or seven-lined by the addition of subordinate lines to a tri-lineal arrangement. Each of these schemes may be infinitely varied, but stems are never grouped together in a careless manner irrespective of an underlying lineal idea. Most arrangements are designed principally to be seen from a point of view immediately in front, yet, we are told, they are not the flat arrangements which might at first sight be supposed from explanatory drawings, especially in the more complex compositions; a pleasing variety is given at the back and sides as well, and their effect, when regarded from these points, is to some degree taken into consideration.

"Certain errors," says Mr. Conder, "in arranging the lines of floral designs, are pointed out to be strictly avoided. Some of these are called Cross-cutting, View-cutting, Window-cutting, Lattice-cutting and Parallelism, which names sufficiently indicate the effects produced, and the reasons why they are to be condemned. In many compositions one of the principal lines is allowed to droop conspicuously at one side, and is called a Streamer; but it is a fatal error to use a Double Streamer—that is, to insert a drooping branch on each side of the same composition."

Bulletin 34 from the horticultural division of the Cornell University Experiment Station is devoted to the Dewberries, several varieties of which have within late years come into prominence. Since the histories of fruits are soon lost and definite knowledge of their methods of variation and degrees of improvement become impossible, we are glad that a record of this fruit should be made thus early in the history of its cultivation, and we agree with Professor Bailey that it is a great misfortune that we cannot refer to similar reports on other native fruits, such as Blackberries, Raspberries and Grapes. In common speech, the word Dewberry is applied to any creeping Blackberry, but the true Dewberries are distinguished from the Blackberries not only by their trailing habit, but particularly by their inflorescence, which is cymose, the centre flower opening first, and the flowers few and scattered. In the Blackberries, on the contrary, the clusters are essentially corymbose or racemose, the lower and outer flowers generally opening first and the flowers carried in dense clusters. Another difference is, that the Dewberries are propagated from tips, while the Blackberries propagate by suckers.

Dewberries, as cultivated, represent two distinct species of the Bramble or Rubus, the first of which is the northern Dewberry (Rubus Canadensis), to which type belong the varieties known as Windom, Lucretia's Sister and Geer. Under this species are two sub-types, to one of which belongs the Lucretia, botanically recognized as variety roribaccus, and to the other sub-type, the variety invisus, belongs the Bartel or Mammoth, General Grant and Never Fail. The second species is the southern Dewberry (Rubus trivalis), to which belong Fairfax, Manatee, Bauer and Wilson's White. Since these species are quite distinct, it is reasonable to infer that different management should be used in the different classes, or, at least, that various results will be obtained from their cultivation.

Professor Bailey adduces a large mass of testimony from various sources, which brings out the peculiar merits of the Dewberries as cultivated fruits as well as their peculiar demerits. Their good points are earliness, large size, attractive appearance and the ease with which they can be protected in winter. Their quality is a matter of question. In some places, and to some tastes, they are delicious, rich and spicy, while other judges call them flat and flavorless. The disadvantages in the cultivation of Dewberries are the failure of the flowers to set, the formation of nubbins, or imperfect fruit, and the difficulty of picking the fruit. There is reason to believe that pruning and thinning the canes would tend to obviate the first two difficulties and to make the plants productive, but this is not known positively. The labor and unpleasantness of picking may be avoided by training the plants on a rack or trellis, and by keeping them well pruned.

The plants are generally set about the same distance apart as Blackberries—that is, in rows seven feet apart and three or four feet apart in the row, and the canes are allowed to lie on the ground, and are headed in when they reach about three feet in length. A mulch of straw beneath the canes keeps the berries clean and renders picking pleasanter. A wire trellis, like a Grape-trellis, or various kinds of racks may be used, upon which fruiting canes can be tied, and for amateur cultivation, at least, some such upright training seems to be advisable. Only four to six fruiting canes should be allowed on one plant. Some varieties, particularly the Windom and Bartel, appear to do best when the fruit is shaded.

Twelve varieties of Dewberry have been named and more or less disseminated during the last twenty years. Of these, four (omitting the Mammoth) have gained more or less prominence, and are found to possess decided merits in certain places. This is a fair proportion of good varieties to inferior ones, as indicated by the annals of other fruits. Many persons have found the cultivation of this berry profitable, and this is evidence that the fruit is an acquisition. But it has not yet found general favor, and it is hardly probable that it will ever become a rival to the Blackberry in popularity.

The varieties which enjoy most prominence are Windom, Lucretia, Bartel and Manatee. The Windom possesses promise for the north-west, of which it is a native. It has not yet been tested to any extent elsewhere. It appears to demand partial shade for the best success. The Lucretia has been found to be a desirable and profitable fruit in many places over a large extent of territory, and it is therefore safe to conclude that its range of adaptation is large. Many, however, have failed with it. It appears to be variable, and many of the plants are worthless. It is seriously attacked by anthracnose and by a Bramble rust. Bartel has found great favor with some growers in the west, from Wisconsin to Nebraska (see GARDEN AND FOREST, vol. iii., p. 373, and vol. iv., p. 19, where the plant is figured). It has not succeeded well in the east so far. Some of the variety known as Mammoth appears to be identical with Bartel. Manatee is probably valuable for the south, and it appears to be the most useful form of Rubus trivialis yet tested. There are varieties of the southern plant with white berries, for which special merits are claimed.

Notes.

Carnations during the holidays brought from $2.50 to $4.00 a hundred, and at these prices the markets took everything that was offered.

We have often spoken of the increasing popularity of Tuberous Begonias in this country, and some photographs just received from the Messrs. John Laing & Son show fields of the single varieties which contain as many as 250,000 plants. We should hardly have expected ten years ago that these plants would soon be grown by the acre in open fields on both sides of the Atlantic.

Some of the poetical names applied by the Japanese to their Chrysanthemums are The Border of the Thin Mist, Companion of the Moon, Shades of the Evening Sun, Beacon Light, Waves in the Morning Sun, The Sky at Dawn, First Snow, Disheveled Hair in Morning Sleep, Star-light Night, Sunny Morning, Leaves and Frost, Golden Dew, Moon-lit Waves and Moon's Halo. This last name we should hardly expect to find applied to a flower of an orange-red color.

The thirty-seventh annual meeting of the New York Horticultural Society will open at Rochester on Wednesday, January 27th, and continue two days. We are acquainted with no similar association in the country where the discussions, especially those on fruit-culture, are uniformly of such a high character. The programme provided for this year is one of wide and varied interest, and the essayists who have been secured are men of the highest rank in scientific and practical attainment.

Among the resolutions passed at the late meeting of the American Forestry Association was one urging upon superintendents of schools in the various states to require that the high schools shall make forestry, in connection with botany, a subject of instruction, and it was further resolved that whereas the interests of agriculture are intimately dependent upon proper forest-conditions, and whereas the Government of the United States has lately made large additional appropriations to agricultural colleges and experiment stations, it is therefore earnestly recommended that forestry be made a part of the curriculum in the agricultural colleges and experiment work in the various stations.

The Albemarle Pippin, which many people consider the best dessert apple, apparently cannot be bought in the markets of any American city, and Americans who want to enjoy this product of the Virginia and Carolina foot-hills must go to London to find it. American Pippins are displayed there in the show-windows of all the principal West End fruiterers; and, like all fruit in London, bring high prices, four shillings the dozen being asked for them last month in the stalls in Covent Garden Market. It is suggested to the growers that it might prove profitable to give Americans an opportunity to purchase this fruit in their own markets. Americans are always willing to pay for superior quality, and those who have not eaten a Virginia Pippin at its best have only a restricted idea of how good an apple can be.

A correspondent of an English paper speaks with enthusiasm of the Christmas Roses at Warwick, where, in one mass, a broad expanse of snowy bloom compelled an expression of admiration. The effect was produced by three hundred clumps of the variety Major of Helleborus niger, all studded with flowers as closely as they could be packed. The blooms were large and beautifully fresh and clean. It is the practice here to grow the plants in a north border, where they remain two, and sometimes three, years. About three weeks or a month before they are wanted in flower the plants are lifted with good balls of earth and placed closely together on the floor of a vinery or other cool structure. A little soil is worked around the roots as the work goes on, and when completed the whole mass is watered through a coarse rose. This washes the soil down among the roots, and leaves the flower-buds clean. As the buds begin to open a little heat is given to lengthen out the flower-stems, as they are better for decorative work when the stems are of good length. After flowering the plants are hardened off, divided, and again planted in the open air.

Death has recently made serious gaps in the ranks of the men who have shed lustre on French horticulture in recent years. At Passy, on the 6th of December, Alphand, the engineer of the city of Paris, died rather suddenly, in his seventy-fourth year. His career commenced at Bordeaux, in 1837, as a civil engineer; here he attracted the attention of Haussmann, who, when in 1874 he became Prefect of the Seine, imported him to Paris to carry out the emperor's plans for the transformation of Paris. He organized the system of street-planting, which has done so much for Paris, and directed the completion of the Bois de Boulogne, constructed the Bois de Vincennes—the people's park of Paris—the Park Monceau and the Park of the Buttes Chaumont, all the squares and promenades of new Paris, and the gardens and greenhouses of la Muette, where the plants used for the decoration of the municipal gardens and buildings and squares are grown, perhaps the best-equipped plant-factory in the world. The success of the great Exposition of 1889 was largely due to the knowledge, taste and marvelous powers of organization of Monsieur Alphand. He made the plan for the grouping of the buildings and the arrangement of the ground, and personally directed all matters of construction and the arrangement of the exhibits. He had brought to this herculean task the experience gained in the organization of two earlier Universal Exhibitions, and the co-operation of a perfectly trained and enthusiastic staff; and yet, with all his exceptional advantages, the apparent ease with which Alphand handled the resources placed at his disposal was marvelous even to those persons most familiar with the perfection of French organization. Under the title of *Les Promenades de Paris*, Monsieur Alphand, many years ago, published a folio volume, splendidly illustrated, in which are described the public works of Paris executed under his direction. Portions of this book, with lists of the trees and shrubs cultivated in the gardens of the city of Paris, were afterward published by Alphand and the Baron Ernouf in a book called *L'Art des Jardins*.

The death of the great engineer was preceded by a few days only by that of Auguste Hardy, the head of the School of Horticulture at Versailles, who, if less known to the general public, was hardly less distinguished in his particular sphere than Alphand was in the larger theatre of his labors. In the interesting and sympathetic sketch of his friend, which Monsieur André has lately printed in the *Revue Horticole*, it is interesting to read that Auguste Hardy's love of horticulture belonged to him by right. His great-great-uncle, named Christophe Hervey, was at the head of the Pépinières des Chartreux at the Luxembourg, from 1752 to 1796. The son of this Hervey was in 1809 entrusted by Chaptal with the duty of reorganizing these nurseries; and a few years later he recommenced in the Luxembourg Gardens the courses of lectures upon the care and pruning of fruit-trees which the Revolution had interrupted. The younger Hervey was succeeded in 1817 in the management of the Luxembourg gardens by Alexandre Hardy, the father of Auguste Hardy, who, naturally enough, determined at an early age to devote his life to horticulture. He became director of the vegetable-garden connected with the palace at Versailles, which he soon made a model of their kind; and when, in 1873, these gardens were converted into the National School of Horticulture, he was selected as the head of the new institution, which has gradually grown and improved under his able management until it has become the best school of its sort in the world. As first vice-president of the National Horticultural Society, Monsieur Hardy was for years the head and moving spirit of that body, and was enabled to render immense services to French horticulture. No man in France appears to have been more loved and honored by his associates, and the influence of his teachings and of a rare and delightful personality was felt far beyond the limits of France through the pupils who had been instructed and trained by him.

As this paper goes to press we learn with regret that Mr. James Taplin, well known as a grower of choice and rare plants, died on Saturday at his home in Maywood, New Jersey. Mr. Taplin commanded respect for his skill in the branches of horticulture to which his life was devoted and for the straightforward manliness of his character. He was in his sixty-first year.

Catalogues Received.

John Lewis Childs, Floral Park, Queens Co., N. Y.; Seeds, Bulbs and Plants, of New, Rare and Beautiful Flowers; Agricultural Seeds.—George Hancock, Grand Haven, Mich.; New and Standard Carnations.—Peter Henderson & Co., 35 and 37 Cortlandt Street, New York, N. Y.; "Everything for the Garden."—E. H. Krelage & Son, Haarlem, Holland; Double Herbaceous Chinese Pæonies.—National Hot Water Heater Co., New York, N. Y.: The Spence Hot Water Heater, for Dwellings, Greenhouses, etc.—J. M. Thorburn & Co., 15 John Street, New York, N. Y.; Flower, Vegetable and Grass Seeds; Tree and Shrub Seeds.—James Veitch & Sons, King's Road, Chelsea, London, S. W., England; Garden and Flower Seeds for 1892; Horticultural Implements.